



GLAST Monthly PSR

GBM



Accomplishments



- ► GBM Quarterly Review held at NSSTC November 17, 2003. Schedule and budget relief offered to GBM, specifics under review.
- GBM Ground Systems CDR received five RFAs: none are expected to create significant cost or schedule impacts.
- GBM reports that all MPE/DJO EQM/flight parts are now ordered delivery expected in a "few" days.
- GBM flight connectors delivered to DJO and SwRI.
- GBM delivered new Nal and BGO thermal models to GLAST. SAI coupled thermal analyses completed: findings expected today.
- MPE Power Box simulator in successful use with DPU EU testing.
- DPU EU testing continues as Build One FSW modules are available. SwRI committed – continue to find and repair flaws in the FPGAs and drivers. NSSTC testing seen as contributing to DPU product development.



Issues/Problems



- Updated German schedule to be presented at the GBM Power Supplies & Detectors CDR this month - GBM scheduler support has been accepted / welcomed by MPE. Late delivery of EQMs mitigated by TBD early Systems Test at DJO.
- GBM-SC thermal accommodation continues to be a concern with upcoming CDR and EQM developments proceeding.
- PMT failed Hamamatsu shock test Hamamatsu reinforcing the tube structure. Shock spectrum of "drop test" does not meet the GBM IRD specification – under review.
- SAI reports that updated detector FEMs indicate GBM mass growth - mass properties to be presented at the upcoming CDR. GBM expects growth to be within allocation when Power Box and DPU numbers are known / scrubbed.
- SAI reports a 2 + month slip in delivery of test harness to GBM
 awaiting updated German schedule.



Upcoming Events



- GBM Power Supplies & Detectors CDR, December 10-11, 2003, Munich, Germany
- ► GBM Team Acceptance Review of DPU slipped from December 1, 2003, Huntsville, AL, to Mid February 2004.
- GBM System Level CDR, January 15-16, 2004, Huntsville, AL, slipping into Spring 04 (late April – early May), date TBD



GBM Top Level Schedule



Activ	Activity	Current	Current	2003	2004	2005
2000	Description strument	Start	Finish			
0304	GBM DPU CDR	05AUG03A	06AUG03A	X		
0310	GBM Flight Software CDR	06AUG03A	07AUG03A			
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6033	GBM H/W CDR (MPE)	10DEC03*	11DEC03			
0313	GBM CDR (Combined Systems)	15JAN04*	15JAN04		1 7	
0098	GBM FSW Build 1 Delivery	14APR04*	14APR04			
5036	MPE: Ship Nal & BGO EQM Detectors to MSFC	24MAY04	28MAY04			
0101	SwRI Delivers DPU Flight Unit to MSFC	31AUG04	31AUG04			
0131	MPE Science Test (Calib) (Last Test in MPE Flow)	29SEP04*	26OCT04			7
0215	MPE Pre-Ship Review (MPE PSR)	08OCT04*	08OCT04			
0137	MPE Deliver Flight Unit to MSFC Complete		01NOV04			
0107	GBM FSW Build 2 Delivery	01NOV04	01NOV04			
0028	GBM PER	10JAN05*	14JAN05			
0164	I&T Complete @ MSFC/GBM Rdy for Obs I&T		31MAY05*			
0174	GBM Instrument FLOAT @ MSFC (75 Calendar Days)	01JUN05	14AUG05			
0389	GBM FSW Build 3.0 Delivery	06JUN05	06JUN05			
0031	GBM PSR	15AUG05*	15AUG05			
0298	MSFC Ships GBM to Spectrum for Observatory I&T	22AUG05*	23AUG05			
0034	GBM Ready for Observatory I&T @ S/C Vendor		01SEP05			
Start Date Finish Da Data Date Run Date	te 21DEC06 Progress Bar GLAST GBM Pro	Schedule	Date	Revisio	on C	hecked Approved



Rolling Wave Schedule



Activ	Activity	Current	Current				
ID	Description	Start	Finish	NOV 2	DEC	JAN	FEB
	strument			NOV	DEC	JAN	FEB
	p-Level Development/Milestones		The state of the s				
6033	GBM H/W CDR (MPE)	10DEC03*	11DEC03				
0313	GBM CDR (Combined Systems)	15JAN04*	15JAN04				
GBM Su	bsystem Milestones		0		I L		
6092	MSFC Deliver Structural Math Models to GSFC	23OCT03*	23OCT03				
7025	MSFC Receives GBM FLT Connectors from	30OCT03*	30OCT03	7			
5069	MSFC Deliv FLT Connectors to MPE	14NOV03*	14NOV03				
0638	SwRI Deliver DPU EU #1 to MSFC	14NOV03	14NOV03				
6091	MSFC Deliver Thermal Math Models to GSFC	14NOV03*	14NOV03		1		
5070	MPE Deliver PwrBox EEE Parts to Astrium	19DEC03*	19DEC03				
6063	MPE: Deliv PwrBox Mechanical Parts to	19DEC03*	19DEC03				
0659	MPE: Deliver STM Units to MSFC	12JAN04	21JAN04		ĺ		
7019	MSFC Rec Dtr Location&Cable Length from	14JAN04*	14JAN04				
8051	MPE Deliver EEE Parts to DJO	30JAN04*	30JAN04				
GBM Fli	ght Instrument Development		1		i i		
0644	Develop DPU Engineering Units 1 & 2	11APR02A	14NOV03				
0647	DPU BB @ MSFC for Testing	08JUL02A	23DEC03				
6059	Prepare Detailed Design & Drawings of	01MAY03A	14NOV03				
0185	Develop STM Manufacturing Drawings	01MAY03A	14NOV03				
6064	Develop DPU-Test & Evaluation System	02JUN03A	11DEC03		!		
6070	Develop Ground Supt Sys (GSS) SII-1	01JUL03A	23DEC03				
6073	Develop Ground Supt System (GSS-1)	01OCT03*	30JUL04				
Start Date Finish Dat Data Date Run Date	e 21DEC06 01OCT03 04DEC03 11:50 Progress Bar Critical Activity	GBM Projec Rolling Wa atus as of 1	ve	Date	Revision	Chec	ked Approved



Rolling Wave Schedule



Activ ID	Activity Description	Current Start	Current Finish	20 NOV	03 DEC	JAN	04 FEB
0297	MPE: Manufacture STM Units	17NOV03	09JAN04				
0653	DPU EU #1@ MSFC for Testing-1	17NOV03	03MAY04				!
0158	MPE: PowerBox Proto FM Manufacturing	24NOV03	03FEB04				
0335	Detector Module FM Redesign/Update	11DEC03*	06JAN04				
6067	Conduct DPU-Test & Evaluation System	12DEC03	12JAN04				
0179	GSE's For PwrBox MAIT	12DEC03*	15JAN04				
GBM Ins	strument Flight Software		i i				1
0347	GBM FSW 1.0 Validation Test Plan	20JAN04*	04MAY04				

Sheet 2 of 2



Deliverable Schedule



Activ	Activity Description	Current Start	Current Finish	2003	2004	2005
	strument	Start	FIIIISII			
	MSFC Receives SC Simulator (SIIS) from Spectrum	30MAY03A	30MAY03A			
NO WHILE DECK	MSFC Dlv Final Cable&Connector Specs to Spectrum	03JUL03A	03JUL03A	*		
42 000A-24692Y	MSFC Deliver Structural Math Models to GSFC	03NOV03*	03NOV03			
000000000000000000000000000000000000000	MSFC Receives GBM FLT Connectors from Spectrum	03NOV03*	03NOV03			
	MSFC Deliver Thermal Math Models to GSFC	14NOV03*	14NOV03			
10 10 10 10 10 10 10 10 10 10 10 10 10 1			and the second second second			
1.0000000000000000000000000000000000000	MSFC Rec Dtr Location&Cable Length from Spectrum	14JAN04*	14JAN04	-		
20000000000	MSFC Deliver STM Units to Spectrum	20FEB04*	20FEB04	-		
\$250000000000	MSFC Receives GBM Test Cables from Spectrum	01MAR04*	01MAR04	-	 	
	MSFC Deliver GIS to Spectrum	14MAY04	14MAY04			
	MSFC Deliver LV PowerBox Load Sim to Spectrum	01JUN04*	01JUN04	1111111		
7013	MSFC Rec Final SC Math Mass Density Mod from SA	04JAN05*	04JAN05	_		<u> </u>
7015	MSFC Rec Final LAT Math Mass Density Mod fr SLAC	04JAN05*	04JAN05			
7011	MSFC Del Final GBM Math Mass Density Mod to SLAC	05JAN05*	05JAN05	1111111		
7020	MSFC Deliver Final GBM Test Procs to Spectrum	19JUL05	19JUL05			
0298	MSFC Ships GBM to Spectrum for Observatory I&T	22AUG05*	23AUG05			
7029	MSFC Deliver GSE to Spectrum (Elect & Mech)	23AUG05	23AUG05			
Start Date Finish Dat	Lany Bai	Sheet 1 of 1	Date	Revision	1 10	Checked Approved
Data Date Run Date	Progress Bar 01NOV03 04DEC03 14:51 Overa Systems, Inc. Progress Bar Critical Activity MSFC-Spectro Status as of	um-SLAC				



GBM MPE Schedule Reporting



- EQMs slip badly, Flight units may still come in on time as DJO attempts to contain overhead costs.
- BGO EQM February to May 04 slip regaining some ground in manufacturing.
- Nal EQM February to May 04 slip fabrication underway
- Detector Thermal Models delivered to GLAST
- Power Supply Box Non critical slippage in delivery
- Flight Detectors PMT fails shock test Hamamatsu reinforcing the tube structure
- Planning for an early GBM Systems Test at DJO pre GBM System CDR



MPE Schedule



Activ ID	Activity Description	Current Start	Current Finish	2003	200	4
	strument					
0320	FEE/Nal/BGO/PwrBox BB Dev/Phase B Complete	03JAN03A	03JAN03A			
6083	Structural & Thermal Mathematical Modeling	01MAY03A	25SEP03A			
6059	Prepare Detailed Design & Drawings of PwrBox	01MAY03A	14NOV03			
0185	Develop STM Manufacturing Drawings	01MAY03A	14NOV03			
0302	BGO EQM Detector Component Development	01MAY03A	15MAR04			
0305	Nal EQM Detector Component Development	01MAY03A	17MAY04			
0167	Mechanical GSE (MPE w/MSFC Input as Requested)	26JUN03A	26JUN03A			
6042	MPE Delivers FEE Interface Simulator to MSFC	07JUL03A	07JUL03A			
6045	MPE Delivers Power Box Simulator to MSFC	07JUL03A	07JUL03A	X		
0402	MPE Deliv Struct Math Mods of Detectors to MSFC	16SEP03A	16SEP03A			
6087	MPE Deliv Thermal Math Mods of Detctrs to MSFC	25SEP03A	25SEP03A	×		
5069	MSFC Deliv FLT Connectors to MPE	14NOV03*	14NOV03			
0297	MPE: Manufacture STM Units	17NOV03	09JAN04	7:::::::	 	
0158	MPE: PowerBox Proto FM Manufacturing	24NOV03	03FEB04	7	-7	
6033	GBM H/W CDR (MPE)	10DEC03*	11DEC03			
0335	Detector Module FM Redesign/Update Manufact Docs	11DEC03*	06JAN04	4	<u> </u>	
0179	GSE's For PwrBox MAIT	12DEC03*	15JAN04	7		
5070	MPE Deliver PwrBox EEE Parts to Astrium	19DEC03*	19DEC03	<u> </u>		
6063	MPE: Deliv PwrBox Mechanical Parts to Astrium	19DEC03*	19DEC03	7		
0659	MPE: Deliver STM Units to MSFC	12JAN04	21JAN04		A	
0313	GBM CDR (Combined Systems)	15JAN04*	15JAN04			
Start Date Finish Dat Data Date Run Date	Progress Bar GLAST GBM	Sheet 1A of 2B Project Schedule E Tasks	Date	Revision	Checked	Approved
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MPE Schedule



Activ	Activity	Current	Current	2003	2004
ID	Description	Start	Finish		
8051	MPE Deliver EEE Parts to DJO	30JAN04*	30JAN04		, *
8053	MPE Deliver BGO Crystals to DJO	02FEB04*	02FEB04		. 🔻
0170	PwrBox ProtoFit Model Assembly	04FEB04	02MAR04		
8055	MPE Deliv Connectors, PMTs, Heaters&Thermostats	01MAR04*	01MAR04		.
0176	PwrBox ProtoFlt Model Acpt Test(Incl Vibe/TVAC)	04MAR04*	07APR04		
6075	Detector FEE's Ready for Integration	15MAR04*	15MAR04		
6051	BGO EQM Detector Testing @ DJO	16MAR04	13APR04		
0311	Nal EQM Detector Testing @ DJO	16MAR04*	15APR04		
8057	MPE Deliver Nal Crystals to DJO	01APR04*	01APR04		
0119	Detector Module FM Manufacturing	01APR04*	24JUN04		
0155	MSFC Deliv DPU BB(Analog Protoflight) to MPE	14APR04*	14APR04		. 🗷
0641	MSFC Deliver DPU BB to MPE	14APR04*	14APR04		
0314	Deliv EQM Detectors(BGO & Nal) to MPE from DJO	15APR04*	15APR04		. 🔀
5039	EQM Testing @ MPE	16APR04*	21MAY04		
5036	MPE: Ship Nal & BGO EQM Detectors to MSFC	24MAY04	28MAY04		
0173	MPE Deliv Nal Crystal in Sealed Housings	28MAY04	28MAY04	7::::::::::::::::::::::::::::::::::::::	.
0122	Detector Module FM Assembly	25JUN04	29JUL04		
0125	Detector Module FM Acpt Test(incl Vibe&TVAC)	30JUL04	24AUG04	7::::::::::::::::::::::::::::::::::::::	
6023	DJO Deliv Detctr Mod FM & Protoflt PwrBox to MPE	24AUG04	24AUG04		
0128	Performance Test on Subsystem (Detctrs&PwrBx)	25AUG04	28SEP04		
0131	MPE Science Test (Calib) (Last Test in MPE Flow)	29SEP04*	26OCT04		
0215	MPE Pre-Ship Review (MPE PSR)	08OCT04*	08OCT04		
0137	MPE Deliver Flight Unit to MSFC Complete		01NOV04		.

Sheet 2A of 2B